

XXI.—*List of Diurnal Lepidoptera from Port Blair, Andaman Islands, with Descriptions of some new or little-known Species and of a new Species of Hestia from Burmah.*—By J. WOOD-MASON, Deputy Superintendent, Indian Museum, and L. DE NICÉVILLE.

(With Plate XIII.)

The first collection of Andamanese Lepidoptera of any importance was made by the native collector (Moti Ram) who accompanied Mr. Wood-Mason on his first visit to the Andaman Islands in the year 1872; and remained at Port Blair for some months after Mr. Wood-Mason's return to Calcutta, collecting insects in the immediate vicinity of the settlement. This collection was entrusted for determination and description in this Journal to the late Mr. W. S. Atkinson, who, however, only described in the 'Proceedings of the Zoological Society' two of the more obvious novelties, and eventually returned a few of the specimens to Mr. G. Nevill, who at that time had charge of the Museum collection of lepidopterous insects, and who placed them in the collection. These specimens are included in the present list.

Since 1872, numerous collections of Lepidoptera have been formed at Port Blair and at Kamorta in the Nicobars by the officers of the Port Blair establishment, and forwarded by them to England, where in 1877 Mr. F. Moore examined all the material that had been thus collected and drew up a complete list of "The Lepidopterous Fauna of the Andaman and Nicobar Islands," describing therein many new species and varieties both of butterflies and moths. In this list, 71 species of rhopaloceros Lepidoptera are recorded as inhabitants of the Andaman Islands. Since Mr. Moore's paper appeared, 4 new species and varieties of butterflies have been described by as many different authors, bringing up this number to 75. In the present list, 29 additional species, five of them described for the first time, are recorded, making a total of 104,—a number which might no doubt be largely increased by an experienced collector in a few weeks.

Several common species which occur everywhere in the neighbouring regions are not recorded, and these are all the more conspicuous by their absence from the circumstance that their supposed models are also absent; we allude to *Hypolimnas misippus*, *Elymnias undularis*, and the 2nd and 3rd forms of the female of *Papilio polytes*, which respectively mimic *Danais chrysippus*, *Danais plexippus*, *Papilio hector*, and *Papilio aristolochiae*. It is a curious fact that both in the Kulu valley and in the Simla district in the North-Western Himalayas, where *Papilio hector* and *P. aristolochiae* have never been found, the same forms of the female of *Papilio*

*polytes* are also absent: whether they are really absent from the Andaman Islands and the other regions mentioned, and, if so, whether they ceased to be developed or rather were exterminated as soon as the species spread into regions wherein neither of the forms which its females mimic exist, are interesting subjects for future enquiry.

Tribe PAPILIONES.

Family NYMPHALIDÆ.

Subfamily DANAINÆ.

No representative of the genus *Hestia* has been received from Mr. de Roepstorff, but we are indebted to Capt. G. F. L. Marshall, R. E., for the gift of a specimen which that gentleman had received from Colonel Cadell, Chief Commissioner of the Andamans and Nicobars, but which does not agree with Felder's figure and description of *Hestia agamarschana*, the only species of the genus hitherto recorded from those islands, either in the extent and relations of the black markings or in the shape and proportions of the wings; the former being larger, more or less coalescent generally, and completely run together at the outer margin so as to form a distinct black border to each wing, and the posterior pair of the latter being broadly rounded off at the extremity and consequently not presenting the peculiar egg-shaped outline so characteristic of these organs in all the hitherto described Indian *Hestias*, e. g., *H. Lynceus*, *H. Jasonia*, etc., with the latter of which Felder compares his species; the specimen apparently also differs from *H. agamarschana* in having the white of all the wings everywhere more or less clouded with minute black scales. *H. agamarschana*, it is true, to judge from Felder's figure of it, has the posterior wings a little less pointed, the anterior discal spots on the anterior ones obviously more elongated, with more black in the cell and behind it, and the markings generally larger than in *H. Jasonia*, and it is, as might have been expected, more closely related to the specimen obtained by Col. Cadell than to any other species; but, large series of specimens having shown us how extremely constant the different species or local races of *Hestia* are, we cannot unite the two, and we think that the differences they present are in all probability due to a difference of station, and that Helfer may have obtained the specimen that served Felder for type on a different island; all the lepidopterous insects of late years received from the Andamans having been obtained in the immediate vicinity of the settlement at Port Blair, in an area therefore which is a very small fractional part indeed of the Andaman group of islands, which extends through nearly four degrees of latitude. We, therefore, propose to describe the specimen as a new species under the name of

1. *HESTIA CADELLI*, n. sp., Pl. XIII, Fig. 1, ♂.

♂. Allied to *Hestia agamarschana*, Felder. Wings above pure subpellucid white clouded, especially on the outer halves, with minute black scales, and marked and veined with intense black; all the markings larger, more or less coalescent, and blurred or paler at the margins, the veins more broadly black-bordered, and the marginal spots completely run together so that the wings are all, especially the posterior ones, distinctly bordered externally with black.

Anterior wings relatively narrower and longer, being more than twice as long as broad, with the discoidal cell equal in length to the submedian vein, that is to say, to the inner margin, and all but as long as the outer margin measured in a straight line from the extremity of the submedian vein to that of the subcostal; with the anterior discal spots more elongated and more completely coalesced, the spot between the first and second median veinlets alone constantly free, and the large rounded one internal to it in the same cell coalescent with the enlarged extremity of the cellular mark (which fills the cell nearly to the level of the origin of the second median veinlet, and is divided at the base of the wing by three indistinct longitudinal clouded white streaks), and the large mark in front of the submedian vein larger, triangular, and united by a black streak to the discal black spot beyond it.

Posterior wings shorter and broader, with the outer margin more broadly rounded off, the cell and the interspaces beyond it broader, the spot in it larger, and all those around it free, though exhibiting a tendency to coalesce with the black margins of the veinlets.

Wings below dirty-white of a dull opalescent tinge, with fuscous-black markings and veins.

Length of fore-wing 2.45; extreme length of discoidal cell, 1.38; expanse 5 inches.

HAB. Port Blair, S. Andaman.

We have much pleasure in naming this species after Colonel Cadell, Chief Commissioner of the Andamans and Nicobars, who obtained it, and who has shown himself no less ready than his predecessors to help those who are engaged in working out the interesting fauna of the islands under his charge.

*Obs.* The specimens of *Hestia* which Hewitson, in his list of Butterflies from the Andamans (Ann. & Mag. Nat. Hist., ser. 4, vol. xiv, 1874, p. 356), considers to be specimens of *H. agamarschana* remarkable for their dark colour, doubtless belong here.

2. *DANAIS MELANOLEUCA*.

*Danais melanoleuca*, Moore, Proc. Zool. Soc. Lond. 1877, p. 581, pl. lviii, fig. 3.

Numerous specimens of both sexes (*A. de Roepstorff* and *Moti Ram*).

## 3. EUPLEA CORE.

*Papilio core*, Cramer, Pap. Exot. 1782, vol. iii, pl. 266, figs. E, F.

*Euplœa core*, Butler, Journ. Linn. Soc. Lond., Zoology, 1878, vol. xiv, p. 301.

One female (*Moti Ram*) agreeing with Bengal specimens.

## 4. EUPLEA ANDAMANENSIS.

*Euplœa andamanensis*, Atkinson, Proc. Zool. Soc. Lond. 1873, p. 736, pl. lxiii, fig. 2, ♂. Butler, op. cit. p. 300.

Numerous males and females (*A. de R.* and *Moti Ram*).

This is one of the species described from the collection made by *Moti Ram* in 1872.

## Subfamily SATYRINÆ.

## 5. LETHE EUROPA.

*Pap. europa*, Fabr. Syst. Entom. 1775, p. 500.

Males and females, all remarkably fine specimens.

## 6. MELANITIS LEDA.

Males and females (*A. de R.* and *Moti Ram*) and males of *M. ismene*, Cr.

## 7. MYCALESIS MINEUS, Linn.

„ DRUSIA, Cr.

„ BLASIUS, Fabr.

Males and females (*A. de R.* and *Moti Ram*).

## 8. MYCALESIS OTREA.

*Pap. otreæ*, Cramer, Pap. Exot. 1782, vol. iv, pl. 314, figs. A, B.

— *francisca*, Id., *ibid.*, pl. 326, figs. E, F.

A female of one of the numerous varieties of this species.

## 8. MYCALESIS RADZA.

*M. radza*, Moore, Proc. Zool. Soc. Lond. 1877, p. 583, pl. lviii, fig. 2.

One male and two females.

## 9. ELYMNIAS COTTONIS.

*M. cottonis*, Hewitson, Ann. Mag. Nat. Hist. 1874, ser. 4, vol. xiv, p. 358, ♂ ♀.

Numerous males (*A. de R.* and *Moti Ram*); one female (*A. de R.*).

## Subfamily MORPHINÆ.

## 10. DISCOPHORA CELINDE.

*Pap. celinde*, Stoll, Pap. Exot. Suppl. 1790, pl. 37, figs. 1, 1 A.

One female.

## Subfamily NYMPHALINÆ.

## 11. CETHOSIA NICOBARICA.

Felder, Verhand. zool.-bot. Gesellsch. Wien, 1862, vol. xii, p. 484; Novara Reise, Lep. p. 384, pl. xlvi, figs. 7, 8, ♂.—Moore, Proc. Zool. Soc. Lond. 1877, p. 583, ♀.

Two pairs (*Moti Ram*) and one male (*A. de R.*) agreeing perfectly with specimens from the Nicobars.

## 12. ATELLA ALCIPPE.

*Pap. alcippe*, Cramer, Pap. Exot. 1782, vol. iv, pl. 389, figs. G, H.

Numerous specimens, male and female (*A. de R.* and *Moti Ram*).

## 13. CIRRHOCYROA ANJIRA.

*C. anjira*, Moore, Proc. Zool. Soc. Lond. 1877, p. 584, ♂ ♀.

Males and females.

## 14. CYNTHIA EROTA.

*Pap. erota*, Fabr., Entom. Syst. 1793, vol. iii, p. 76.

Numerous males and females.

## 15. MESSARAS ERYMANTHIS, VAR. NICOBARICA.

Felder, Verh. zool.-bot. Gesellsch. Wien, 1862, vol. xii, p. 486.

Males and a female.

## 16. JUNONIA ÆNONE.

*Pap. ænone*, Linn., Cramer, Pap. Exot. 1775, vol. i, pl. 35, figs. A, B, C.

Numerous males and females (*A. de R.* and *Moti Ram*).

## 17. JUNONIA ALMANA.

*Pap. almana*, Linn., Cramer, Pap. Exot. 1775, vol. i, pl. 58, figs. F, G.

One pair.

## 18. JUNONIA ASTERIE.

*Pap. asterie*, Linn., Cramer, Pap. Exot. 1775, vol. i, pl. 58, figs. D, E.

Three males and two females.

## 19. DOLESCHALLIA BISALTIDE.

*Pap. bisaltide*, Cramer, Pap. Exot. 1779, vol. ii, pl. 102, figs. C, D.

Numerous fine specimens of both sexes. Specimens were also obtained by *Moti Ram* in 1872.

## 20. KALLIMA ALBOFASCIATA.

*K. albofasciata*, Moore, Proc. Zool. Soc. Lond. 1877, p. 584.

Male and female.

## 21. EURYTELA HORSFIELDII.

*Eurytela horsfieldii*, Boisduval, Faun. Ent. Madag, 1833, p. 54, ♂.

— *stephensii*, Id., ibid. p. 55, ♀.

A single male.

## 22. CYRESTIS COCLES.

*Pap. cocles*, Fabr., Moore, Proc. Zool. Soc. London, 1878, p. 829.

? *Cyrestis formosa*, Felder, Reise Novara, Lep. p. 412, ♂.

A single male of this delicately tinted butterfly.

## 23. CYRESTIS THYODAMAS.

*Cyr. thyodamas*, Boisd. in Cuv. R. A. 1836, Ins., pl. 138, fig. 4. Doubl. Westw. and Hew. Gen. D. L., pl. 32, fig. 3.

*Amathusia ganescha*, Koll. in Hügel's Kaschmir, 1848, vol. iv, p. 430, pl. 7, figs. 3, 4.

One male.

## 24. HYPOLIMNAS BOLINA.

*Pap. bolina*, Linn., Clerk's Icones, pl. 21.—*Diadema bolina*, Wallace, Trans. Ent. Soc. Lond. 1869, p. 278.

Numerous male and females (*A. de R.* and *Moti Ram*).

## 25. HERONA MARATHUS, var. ANDAMANA.

*Herona marathus*, Westw. Doubl. and Hew. Gen. D. Lep. 1850, p. 293, pl. 41, fig. 3.

— *andamana*, Moore, Proc. Zool. Soc. Lond. 1877, p. 585, ♂ ♀.

Two males and a female.

## 26. PARTHENOS GAMBRISIUS.

*Pap. gambrisius*, Fabr.

Numerous specimens of each sex (*A. de R.* and *Moti Ram*).

## 27. NEPTIS MANANDA.

*N. mananda*, Moore, Proc. Zool. Soc. Lond. 1877, p. 586, pl. lviii, fig. 4, ♀.

Two pairs (*A. de R.* and *Moti Ram*).

Seems very near to *N. khasiana*.

## 28. NEPTIS ANDAMANA.

*N. andamana*, Moore, Proc. Zool. Soc. Lond. 1877, p. 586, ♂ ♀.

Five males and a female (*A. de R.* and *Moti Ram*).

29. *ATHYMA SELENOPHORA*.

*Limenitis selenophora*, Koll. in Hügel's Kaschmir, 1848, vol. iv, p. 426, pl. vii, figs. 1, 2, ♂.

A female, the only one in the Museum, was obtained by Moti Ram in 1872.

30. *SYMPHLEDRA TEUTA*, var. *TEUTOIDES*.

*S. teutoides*, Moore, Proc. Zool. Soc. Lond. 1877, p. 586, ♂ ♀.

Males and females (*A. de R.* and *Moti Ram*).

31. *TANAECIA CIBARITIS*.

*Adolias cibaritis*, Hewitson, Ann. & Mag. Nat. Hist. 1874, ser. 4, vol. xiv, p. 358; Exot. Butt. vol. v, *Adolias*, pl. iv, figs. 12, 13, 15, ♂ ♀.

*Tanaëcia cibaritis*, Moore, Proc. Zool. Soc. Lond. 1877, p. 586.

Numerous males and females (*A. de R.* and *Moti Ram*).

32. *TANAECIA ACONTIUS*.

*Adolias acontius*, Hewitson, loc. cit. p. 357; Exot. Butt. vol. v, *Adolias*, pl. iv, fig. 11, ♀. *Tanaëcia acontius*, Moore, Proc. Zool. Soc. Lond. 1877, p. 586.

One female.

33. *LIMENITIS PROCRIS*, var. *ANARTA*.

*L. anarta*, Moore, Proc. Zool. Soc. Lond. 1877, p. 585.

One female.

34. *NYMPHEALIS ATHAMAS*.

*Pap. athamas*, Drury, Ill. Exot. Entom. 1773, vol. i, pl. ii, fig. 4.

One female.

Family *ERYCINIDÆ*.35. *ABISARA BIFASCIATA*.

*A. bifasciata*, Moore, Proc. Zool. Soc. Lond. 1877, p. 587, pl. lviii, fig. 1, ♀.

Three females.

Family *LYCÆNIDÆ*.36. *LAMPIDES ARDATES*.

*Lycæna ardates*, Moore, Proc. Zool. Soc. Lond. 1874, p. 574, pl. lxxvii, fig. 1, ♂.

One female.

37. *LAMPIDES ÆLIANUS*.

*Hesp. ælianus*, Fabr., *Lycæna ælianus*, Horsfield, Cat. Lep. E. I. Co., 1829, p. 73.

One male.

## 38. LAMPIDES ELPIS.

*Polyomm. elpis*, Godt., Encyclo. Méth. Ins. vol. ix, p. 654.—*Lycæna elpis*, Horsfield, opcit. p. 76, pl. 1, fig. 4, ♀ ♂.

One female and one male (*A. de R.* and *Moti Ram*).

## 39. LAMPIDES PANDAVA.

*Lycæna pandava*, Horsfield, op. cit. p. 84, ♀.

One female.

## 40. LAMPIDES CONF. PACTOLUS.

♀. Wings above much as in *L. pactolus*, differing in having the dark fuscous outer border of the anterior wing spotless and that of the posterior wing very much less distinctly marked in the same manner, no discocellular mark in either wing, and the whole upperside apparently more clouded with smoky fuscous scales.

Wings beneath very pale fuscous, with a submarginal fascia composed of rhomboid spots and a marginal one of narrow oval spots fuscous of a rather darker shade than the ground, both margined and connected together by whitish, the latter of them developed, in the interval between the first and second median branches, into a conspicuous jet-black circular spot divided externally by a semicircle of pale blue metallic scales and encircled internally by luteous white, and into two minute ones, one on each side of the submedian vein, internally covered with blue scales.

Anterior wings with two small subcostal spots, a short discocellular fasciole, and a discal fascia strongly faulted at the second median veinlet so that the outer white margin of its posterior portion is in line with that of its anterior portion, and the inner white margin of its posterior portion in line with the discocellular veinlet.

Posterior wings with a similar discocellular fasciole, and complexly faulted and contorted discal and basal fasciæ; all the fasciæ in all the wings margined on both sides with fuscous of a very slightly deeper tint than the ground and with whitish.

Since the above description was written, we have discovered that five unnamed insects in the Museum from Cherrapunji in the Khasi Hills, the Sikkim Hills, and Sibsagar (*S. E. Peal*) in upper Assam are males of this species, and the following is a brief description of one of them:—

♂. Wings above semitranslucent palish fuscous with a light and tolerably brilliant amethystine lustre, edged with a darker anteciliary line.

Wings below much as in the female, with the macular submarginal fuscous fascia of all the wings broader, and the anal and subanal black spots rather larger and conspicuously encircled with fulvous internally.



Length of anterior wing ♀ .72, ♂ .58—.68; whence expanse = ♀ 1.5, ♂ 1.2—1.4 inches.

41. LAMPIDES PLUMBEOMICANS, n. sp.

Closely allied to the preceding, but much smaller; with three instead of two fasciæ on the underside of the anterior wings, with all the fasciæ relatively broader, and with those of the posterior wings much less complexly faulted and contorted.

♂. Wings above dark amethyst-purple with a dull greyish leaden metallic lustre, with a deep black anteciliary line and fuscous fringe.

Wings beneath pale fuscous of a purplish tinge, with a marginal and a submarginal fascia composed of suboval spots of a darker shade than the ground, both margined and connected by whitish, the latter of them bearing in the posterior wings subanal and anal black spots in every respect as in the preceding except that the luteous inner line is rather more distinct.

Anterior wings with a basal fascia, a discocellular fasciole, and a discal fascia faulted as in the preceding at the second median veinlet; with the fasciæ as also the fasciole commencing at the costal vein where they are all broken.

Posterior wings with corresponding fasciole and fasciæ, which latter are more or less faulted at every vein though much less contorted and consequently more easily traced than in the preceding; fasciæ and fascioles of both wings margined on both sides with fuscous of a rather deeper shade than the ground and with whitish.

♀. Wings above dull smoky.

Anterior wings with a pale discal patch which has a brilliant metallic pale bluish lustre in certain lights.

Posterior wings with a thin interrupted white line before the dark anteciliary one and a submarginal row of dark spots before it, spots and line increasing in size, breadth, and distinctness from the apical angle to the subanal region, the former obscurely encircled internally with smoky whitish.

Wings beneath lighter, with all the markings more pronounced, being margined with fuscous much darker than the ground and with pure white, and the marginal and submarginal macular fasciæ, especially conspicuous and coarse.

Length of anterior wing ♂ .56, ♀ .58, whence expanse = ♂ 1.12, ♀ 1.16 inches.

Two males and a female.

## 42. POLYOMMATUS SANGRA.

*P. sangra*, Moore, Proc. Zool. Soc. Lond. 1865, p. 772, pl. 41, fig. 8, ♂.

Innumerable males and females. The commonest 'blue' in Calcutta, being obtainable in any number wherever there is a patch of grass.

## 43. APHNEUS LOHITA, var. ZOILUS.

*A. zoilus*, Moore, Proc. Zool. Soc. Lond. 1877, p. 588, ♂.

♀. Larger than the male. UPPERSIDE smoky brown, marked obscurely with darker bands corresponding to those of the underside. UNDERSIDE with the intervals between the bands wider owing to the greater breadth of the wings. In all other respects as in the male.

Length of fore-wing .7; whence expanse = 1.46 inches.

Males and one female.

## 44. HYPOLYCÆNA ERYLUS.

*H. erylus* (Godart), Hewitson, Ill. D. Lep. Lyc. p. 49, pl. xxi, fig. 1 ♂, 2, 4 ♀.

*H. andamana*, Moore, Proc. Zool. Soc. Lond. 1877, p. 589, ♂ ♀.

Three males and a female. Absolutely indistinguishable from fresh Sikkim specimens.

## 45. SITHON SUGRIVA, var. ARECA.

*Amblypodia sugriva*, Horsfield, Cat. Lep. E. I. Co. 1829, p. 105, pl. i, figs. 10, 10a, ♂.

*Myrina sugriva*, Horsfield and Moore, Cat. Lep. E. I. Co. p. 51, pl. 1a, fig. 12, ♂.

*Myrina areca*, Felder, Verhand. zool.-bot. Gesellsch. Wien, 1862, vol. xii, p. 481, ♂.

♀. Smaller than the male. UPPERSIDE sepia-brown with a bronzy gloss, the spots and fasciæ of the underside scarcely showing through. *Hindwing* with a pure white patch divided by the brown veins, margined externally by a fine and sharp dark brown or black anteciliary line, and marked by a large circular black spot at the base of the tail on the anterior side and by another smaller lighter and less distinct one on the posterior side; with the caudal lobe blackish, and the tails black with pure white cilia. UNDERSIDE pure white marked as in the male with dark sepia-brown fasciæ and spots, but with the black caudal spots larger and the cilia of the posterior part of the hind-wing pure white like those of the tails.

Length of fore-wing .66; whence expanse = 1.38 inches.

It differs from *S. phocides* ♀ (= *S. joleus* (Felder), Hew., Ill. D. Lep. Lyc. pl. xiii, figs. 16, 17) in the far less extent of the white patch on the upperside of the hind-wing, and in the larger size and darker colour of the spots and fasciæ, as well as in the greater pureness of the white, of the underside generally.

One male and one female, the former differing from a specimen from the Indian continent (Sylhet) only in its rather darker and more distinctly marked underside. The lighter apical portion of the fore-wing in the male has a beautiful bronzy gloss changing to dark purple according to the incidence of the light. Both the insular and continental specimen, but especially the former, present slight traces of the blue marginal band so conspicuous in the hind-wings of Javan and Ceylonese examples, in the shape of a small patch of metallic green scales on the anterior caudal lobe.

The male of this species, with its velvety black upperside, rich dark brown underside, and elongated hind-wings produced into long robust buff tails, presents a strong contrast to the dull-coloured female with her pure dazzling white underside conspicuously spotted and banded with dark brown, broader wings, and comparatively short and feeble white and black tails.

*Sithon kamorta* is not the female of *S. sugriva*, var. *areca*, as Felder has suggested, but that of a distinct though closely-allied species peculiar to the Nicobars, whence the Museum has recently received a specimen of the true male differing from *S. kamorta* just in the same way as *S. sugriva* ♂ does from its female, which appears not to have been previously described.

#### 46. SITHON WESTERMANNII, var.

*Dipsas westermanni*, Felder, Reise Novara, Lep. p. 241, pl. xxx, figs. 21, 22, ♀, from Luzon.

A male and a female, the latter differing from the former in having the upperside smoke-brown instead of purplish fuscous, no discal pale patch in the fore-wing, the hind-wing devoid of blue, and the underside ochraceous-brown instead of dark fawn-colour with a vinous tinge. The male differs from the same sex of *S. westermanni*, in having less blue on the upper surface, and the anal spot completely encircled with grey scales.

A comparison of Andamanese with Philippine specimens would, we have no doubt, show that the former is just as much entitled to a name of its own as the latter. Both are merely insular races of the Indian continental *S. jangala*.

#### 47. SITHON TARPINA.

*Myrina tarpina*, Hewitson, Ill. D. Lep. Lyc. Suppl. 1877, p. 23, pl. (Suppl.) iii a, figs. 93, 94, ♀.

♂. UPPERSIDE rich deep metallic violet-blue, with the anterior margin of the fore-wing narrowly, and the external margin of both wings more broadly and decreasingly bordered with black. UNDERSIDE with about the basal two-thirds of both wings cœrulescent or virescent opaque dead white, the rich red-brown of the outer margins darker but similarly

banded and marked with white, and the orange spots smaller with a diffused patch of greyish white scales between them and two or three in front of them all somewhat confounded with the white marginal line.

Three specimens.

Length of forewing  $\cdot 84$ ; whence expanse = 1.78 inches.

#### 48. DEUDORIX EPIJARBAS.

*Dipsas epijarbas*, Moore, Cat. Lep. E. I. Co. 1857, vol. i, p. 32, ♂ ♀.

*Deudorix epijarbas*, Hew., Ill. D. Lep. Lyc. pl. vii, figs. 16, 18, ♂, 17, ♀.

Very numerous specimens of both sexes.

#### 49. DEUDORIX DIENECEES.

*D. dieneees*, Hewitson, Ill. D. Lep. Lyc. Suppl. 1878, p. 31, pl. v a, figs. 65, 67 ♂, 66 ♀.

Males and females.

The Museum possesses males from Silhet and Calcutta also.

#### 50. DEUDORIX ORSEIS.

*D. orseis*, Hewitson, Ill. D. Lep. Lyc. 1863, p. 23, ♂.

♀. UPPERSIDE lighter, with a distinct purple gloss which has a light steel-bluish tint at the base of all the wings. UNDERSIDE lighter, with all the markings more distinct.

Length of fore-wing  $\cdot 68$ ; whence expanse = 1.42 inches.

Two males and two females.

#### 51. DEUDORIX VARUNA.

*Thecla varuna*, Horsfield, Cat. Lep. E. I. Co. 1829, p. 91, ♂ ♀.

A single male.

#### 52. MYRINA ATYMNUS, VAR. PRABHA.

*Myrina prabha*, Moore, Proc. Zool. Soc. Lond. 1877, p. 589, pl. lviii, fig. 5, ♀.

Males and female.

#### 53. AMBLYPODIA NARADA, VAR. ERICHSONII.

*Amblypodia narada*, Horsfield, Cat. Lep. E. I. Co. 1829, p. 98, pl. 1, fig. 8, ♂ ♀.

———— *erichsonii*, Felder, Reise Novara, Lep. p. 218, ♀, from Luzon.

Two females.

#### 54. ARHOPALA CENTAURUS, VAR. CORUSCANS.

*Pap. centaurus*, Fabr. *Ambly. centaurus*, Horsf., Cat. Lep. E. I. Co. 1829, p. 102. Hewitson, Cat. Lep. Brit. Mus. pl. ii, figs. 10—13, ♂ ♀.

Male and female; the latter much smaller than the former. The bases of both wings in both sexes, but especially in the female, lighter,

with a greenish tinge, so that the whole central portion of the insects appears brilliantly illuminated by a pale greenish blue reflection in most lights.

55. SURENDRA QUERCETORUM, var. LATIMARGO.

*S. latimargo*, Moore, Proc. Zool. Soc. Lond. 1879, p. 142, ♂ ♀.

A male and two females.

Is *A. quercetorum* itself more than a local race or variety of *A. vivarna*, Horsfield, Cat. Lep. E. I. Co. 1829, p. 99, from Java?

Family PAPILIONIDÆ.

Subfamily PIERINÆ.

56. TERIAS HECABE.

*Pap. hecabe*, Linn.

Males and a female.

57. TERIAS HARINA.

*T. harina*, Horsfield, Cat. Lep. E. I. Co. 1829, p. 137.

Males and females.

58. HEBOMOIA ROEPSTORFFII.

*H. Roepstorffii*, Wood-Mason, antea, p. 134 ♂, et p. 150, ♀.

“♂. Differs from *H. glaucippe*, the only species of the genus with which I have been able to compare it, on the UPPERSIDE, in having the apical orange patch of the fore-wing larger, extended into the cell, and less broadly bordered with fuscous, both internally and externally; the submarginal fuscous spots smaller and completely isolated from the fuscous of the outer margin; the fore-wing at the posterior angle tinged, and the hind-wing externally broadly bordered, with bright sulphur-yellow, which colour is shaded off into the cream-colour of the rest of both wings; and the outer margin of the hind-wing narrowly edged with fuscous, which gradually broadens from the anal to the anterior angle and extends inwards in points at the veins:—and, on the UNDERSIDE, in having the brown mottling of the fore-wing arranged in the form of a tolerably conspicuous band coincident with the macular band of the upperside; and the ground-colour of the hind-wing, as also that of the mottled portion of the fore-wing, of a rich golden-luteous colour.

Length of fore-wing 1·76; whence expanse = 3 62 inches.

♀. UPPERSIDE. *Fore-wing* with the orange patch devoid of amethystine gloss, externally more broadly bordered with fuscous (which at each veinlet gives off inwards an angular process the extremity of which is

continued on as a very narrow edging to each side of the veinlet), but internally much less distinctly so than in the male; with the cell more clouded with dark scales; and with the sulphur-colour at the inner angle more diffused. *Hind-wing* with a marginal row of large subtriangular fuscous spots placed upon the veinlets from the first subcostal to the first median (the two last obsolete), decreasing from the second in the direction of the anal angle, and connected together at the extreme margin of the wing by a narrow edging of the same colour, which extends to the anal angle; with a submarginal series of six roundish spots, similarly decreasing from the first, and alternating with those of the marginal series, each being placed upon a fold, the first and largest on the fold between the costa and the first branch of the subcostal, and the last on that between the first and second median veinlets; and with the sulphur-colour around the four intermediate submarginal spots stained with orange. **UNDERSIDE** of *both wings* paler.

Length of fore-wing 1·7; whence expanse = 3·5 inches.

HAB. South Andaman.

In a specimen of the male from the collection of Captain G. F. L. Marshall, the submarginal fuscous spots of the fore-wing are obsolete.

The place of this species would seem to be between *H. vossii* (Maitland) and *H. sulphurea*, Wallace."

#### 59. IXIAS ANDAMANA.

*I. andamana*, Moore, Proc. Zool. Soc. Lond. 1877, p. 590, ♂ ♀.

Numerous males and females (*A. de R.* and *Moti Ram*).

#### 60. CATOPSILIA CROCALE.

*Pap. crocale*, Cramer, Pap. Exot. 1779, vol. i, pl. lv, figs. C, D, ♀.

*Callidryas crocale*, Butler, Lep. Exot. 1869-74, p. 22, pl. ix, figs. 1, 2, 3, 6, ♂ ♀.

Two males.

#### 61. PIERIS NADINA, var. NAMA.

*Pieris nadina*, Lucas, in Guérin's Rev. et Mag. Zool. 1852, ser. 2, vol. iv, p. 333, ♂.

*P. nama*, Moore, Proc. Zool. Soc. Lond. 1857, p. 102, pl. 44, figs. 1, 2, ♂ ♀.

————— Hewitson, Ex. Butt. *Pieridae*, pl. 6, fig. 37.

Males and females.

#### 62. PIERIS CORONIS, var. LICHENOSA.

*Pap. coronis*, Cramer, Pap. Exot. vol. i, 1776, pl. 44, figs. B, C.

*Pier. lichenosa*, Moore, Proc. Zool. Soc. Lond. 1877, p. 591.

Two pairs.

63. *ERONIA VALERIA*, var. *NARAKA*.

*Pap. valeria*, Cramer, Pap. Exot. 1779, vol. i, pl. 85, fig. A, ♂.

*Eronia naraka*, Moore, Proc. Zool. Soc. Lond. 1877, p. 591, ♂ ♀.

Males and a female.

The Javan specimens of the male described by Horsfield and figured by Cramer both have the black outer border of the anterior as well as the posterior wings immaculate, and thus agree more closely with the S. Indian (var. *pingasa*), Ceylonese (var. *ceylonica*), and Andamanese (var. *naraka*) varieties. As might have been expected from its more northern station, the Andamanese more nearly approaches the north Indian form (var. *gaea*).

64. *TACHYRIS PAULINA*.

*Pap. paulina*, Cramer, Pap. Exot. vol. ii, pl. 110, figs. E, F, ♀.

*Pieris albina*, Boisd., Sp. Gén. Lep. p. 480, ♂.

*Tachyris paulina*, Wallace, Trans. Ent. Soc. Lond. 1867, ser. 3, vol. iv, p. 369.

Two males and two (white) females differing in no respect from those of continental India (Naga Hills, Cachar, Bhutan, and Madras).

*Tachyris galathea*, Felder, is a perfectly distinct race peculiar to the Nicobars, whence we have specimens.

## Subfamily PAPILIONINÆ.

65. *ORNITHOPTERA HELIACONOIDES*.

*Ornith. heliconoides*, Moore, Proc. Zool. Soc. Lond. 1877, p. 592, ♂ ♀.

A male and a female.

66. *PAPILIO CHARICLES*.

*P. charicles*, Hewitson, Ann. & Mag. Nat. Hist. 1874, ser. 4, vol. xiv, p. 356; Exot. Butt. vol. v, Pap. pl. xiv, fig. 45, ♀.

One female of the 3rd form (*Moti Ram*).

This is the Andaman representative of the continental *P. androgeus*; it is interesting to find that it has acquired the red tails of its model, *P. rhodifer*, the slight Andamanese modification of the continental *P. doubledayi*.

67. *PAPILIO MAYO*.

*P. mayo*, Atkinson, Proc. Zool. Soc. Lond. 1873, p. 736, pl. lxiii, fig. 1, ♂.

Two males (*A. de R.* and *Moti Ram*). The species was described by Atkinson without acknowledgment from the specimens obtained by *Moti Ram*.

The Andamanese representative of the continental *P. polymnestor*.

68. *PAPILIO POLYTES*, var. *NIKOBARUS*.

Felder, Verh. zool.-bot. Gesellsch. Wien, 1862, vol. xii, p. 483.

Males and females of the first form only (*A. de R.* and *Moti Ram*).

## 69. PAPILIO AGAMEMNON.

Males and females (*A. de R.* and *Moti Ram*).

## 70. PAPILIO EURYPYLUS.

One pair.

## 71. PAPILIO CLYTIA, VAR. FLAVOLIMBATUS.

*P. dissimilis*, var. *flavolimbatus*, Oberthür, *Etudes d'Entom.* 4 me livr. p. 101, ♀.

This variety agrees in the size and distinctness of the cretaceous white markings of the upperside best with specimens from Silhet, Sibsagar, and Burmah on the Indian mainland, but differs from them, as indeed it does from all specimens in the Museum, in the large amount of rich golden yellow at the outer margin on both sides of the posterior wings: the marginal and submarginal flavous spots seen at the anal angle of the wing in most continental specimens are in this case so completely run together on both sides as to have left only a small central spot of the black ground-colour that separates them from one another in continental specimens; they are succeeded by a series of six (incisural) marginal spots of the same colour; the submarginal lunules are much larger and more spear-shaped and, moreover, sullied with yellow, especially the one near the anal blotch: on the *underside*, the marginal golden yellow spots are larger and tend to coalesce with the hastate submarginal markings, which consequently are more suffused with yellow than they are on the upperside.

A single male.

## 72. PAPILIO LÆSTRYGONUM.

*P. læstrygonum*, Wood-Mason, *Proc. Asiat. Soc. Bengal*, June, 1880, p. 102, et *antea*, p. 178, pl. vi, fig. 1, 1a, ♂.*P. epaminondas*, Oberthür, *Etudes d'Entom.* 4 me livr. p. 62, pl. iv, fig. 1, ♂.

“♂. Wings above cretaceous-white, the anterior ones black at the insertion, scarcely tinged with greenish at the base, with five black bands commencing at the anterior margin and cutting the cell, the first basal, extending to the inner margin, the second rather broader, also extending to the inner margin, and emitting a short conical process at the origin of the first median veinlet, the third scarcely broader, extending to the median vein, the fourth narrower, triangular, reaching or all but reaching the median vein, the fifth much the broadest of all, triangular, divided anteriorly into two forks by a curved narrow decreasing and interrupted band of the ground-colour running from the costal vein to the third median veinlet, extending to the inner margin, separated from the black outer marginal band by a band of the ground-colour divided by the black veins and very slightly if at all narrowing from the anterior margin up to the second median veinlet, whence it gradually decreases in width and distinctness to



the inner angle; all these black bands connected at the anterior margin, and the first, second, and fifth of them at the inner margin also, by a very narrow edging of black.

Posterior wings with two black bands commencing and connected at the anterior margin and coinciding with bands of the underside, one basal, extending to the end of the first half of the first median veinlet, and the other discal, extending a short distance into the space between the 2nd and 3rd median veinlets; with a small black spot near the end of the cell scarcely distinct from the discal band; with four discal spots immediately beyond the cell running nearly parallel with the band, the first and largest transversely elongated and coinciding with a spot on the underside, the rest smaller than the corresponding ones on the underside, which latter are consequently seen through the wing-membrane beyond the margins of the former; with a black spot succeeded by one of luteous at the anal angle; with a marginal and submarginal series of black lunules coalescent in the anterior third but more distinct in the posterior two-thirds of the wing, where the two series are more or less separated from one another by ashy-grey scales continuous with the ashy patch occupying the outer third of the wing and extending also along so as to obscure the ultra-cellular part of the basal black band; with the discal band and spots more or less irrorated and obscured with ashy-grey scales so that the disk of the wing appears mottled with black and grey; and with the black tails, as also the incisures, margined with cretaceous-white.

Wings below pure white, anterior ones marked as above, with the ground-colour at the base and between the black bands as far as the median vein and its second branch yellowish; with the band of ground-colour separating the fifth black band from the black outer border distinct, and not decreasing but on the contrary rather increasing in breadth, to the inner angle; and with the curved line dividing the fifth black band into two forks more distinct and less discontinuous.

Posterior wings, from the base up to the median vein and the discal black band, yellowish, with three black bands, one narrow running from the insertion along the inner margin close to the abdominal fold, and two broader commencing and connected at the anterior margin and cutting the cell, one of these latter basal, extending nearly to the end of the basal half of the first median veinlet, and the other discal, some distance into the space between the 2nd and 3rd median veinlets, the two first of the three bands connected together at their outer extremities and with two largish coalescent black spots in the anal region; with a small black spot near the extremity of the cell, and six of the same colour immediately beyond it disposed in a line which runs straight from the costal vein as far as the cell, but then curves abruptly inwards, the first of these spots transversely

elongated, extending from vein to vein, and connected with the second, which is roundish and itself connected with the discal band, the third oval, about one-third the size of the second, and touching the discocellular veinlet, the fourth twice the size of the third, in contact with the median vein and its two last branches, the fifth rather smaller than the third, the sixth crescentic and connected with the two above-mentioned large spots in the anal region; with six large diffused luteous blotches externally margined with black, and increasing in size and depth of colour from the anterior to the inner margin; with the ground-colour between these blotches and the discal black spots pure white; with an increasing series of six marginal lunules, between which and the wavy black margins of the luteous blotches the ground-colour is white in the anterior and grey or greyish-white in the posterior portion of the wings; and with the incisures and the tails margined with lutescent.

Head black with two white frontal bands; pronotum with a luteous spot on each side; thorax above jet-black ornamented at the sides with long grey setæ, below cretaceous-white; abdomen cretaceous-white with a tapering dorsal black band and two lateral fuscous ones.

Length of anterior wing 1·7; whence expanse = 3 5 inches.

HAB. South Andaman. Two males.

To mark its close relationship to *A. antiphates*, I have called the species *P. laestrygonum* after the mythical people over whom Antiphates is supposed to have reigned. It differs from its nearest ally in having the upperside much blacker (the bands of the forewing being broader; the first, second, and fifth of them together with the marginal one extending to the inner margin, where they are all connected together by a very narrow black edging; and the disk of the hindwing mottled as it were by black and grey), a much greater extent of grey, and more highly developed marginal and submarginal lunules on the hindwing; in the abdomen being dorsally banded with black and the thorax ornamented with grey setæ, &c."

### 73. PAPILO RHODIFER.

*P. rhodifer*, Butler, Ent. Month. Mag., vol. xiii, 1876, p. 57.

Five males.

### Fam. HESPERIDÆ.

### 74. ISMENE CHROMUS.

Numerous examples (*A. de R.* and *Moti Ram*).

## 75. ISMENE ARIA.

*Ismene aria*, Moore, Proc. Zool. Soc. Lond., 1865, p. 784, ♂ ♀.—Hewitson, Exot. Butt., vol. iv, *Hesp.*, pl. iii, figs. 24, 25, ♀.

Male and female.

## 76. ISMENE LEBADEA.

*Heperia lebadea*, Hewitson, Exot. Butt., 1868, vol. iv, *Hesp.* pl. iii, figs. 22, 23, ♂.

One male.

## 77. ISMENE DRUNA.

*I. druna*, Moore, Proc. Zool. Soc. Lond. 1865, p. 784, ♂.—Hewitson, Exot. Butt. vol. iv, 1868, *Hesp.* pl. iii, fig. 26, ♂.

Two males.

## 78. TAGIADES RAVI.

*Pterygospidea ravi*, Moore, Proc. Zool. Soc. Lond. 1865, p. 779, ♂ ♀.

One male and two females.

## 79. TAGIADES ALICA.

*T. alica*, Moore, Proc. Zool. Soc. Lond. 1877, p. 593, pl. lviii, fig. 11, ♂.

♀. Above lighter, the dark markings consequently appearing more prominent.

The anterior wing has a minute transparent speck behind the three subapical ones, a very indistinct and small double whitish spot near the end of the cell on the upperside, and two discal whitish spots on the underside, the anterior one of which only is partially transparent and visible on the upperside.

The posterior wing is less white above and has the anal angle rounded as in *T. obscurus*.

Male and female.

## 80. PLESIONEURA ALYSOS.

*P. alysos*, Moore, Proc. Zool. Soc. Lond. 1865, p. 789.

Many specimens.

## 81. HESPERIA OCEIA.

*H. oceia*, Hewitson, Desc. *Hesp.* 1868, p. 31.

Males.

## 82. HESPERIA COLACA.

*H. colaca*, Moore, Proc. Zool. Soc. Lond. 1877, p. 594, pl. lviii, fig. 7, ♂ ♀.

Two specimens.

## 83. HESPERIA CAHIRA.

*H. cahira*, Moore, Proc. Zool. Soc. Lond. 1877, p. 593, pl. lviii, fig. 8, ♂ ♀.  
Males and females.

## 84. HALPE BETURIA.

*Hesperia beturia*, Hewitson, Desc. Hesp. 1868, p. 36.  
*Halpe beturia*, Moore, Proc. Zool. Soc. Lond. 1878, p. 690.  
Males and one female. A pair from Calcutta in the Museum.  
The number of spots in the forewing varies from 6 to 8.

## 85. HESPERIA CHAYA.

*H. chaya*, Moore, Proc. Zool. Soc. Lond. 1865, p. 791.  
Male.

## 86. TELEGONUS THYRSIS.

*Telegonus thyrsis* (Fabr.), Butler, Fabr. Lep. p. 262.  
*Hesperia pandia*, Moore, Proc. Zool. Soc. Lond. 1865, p. 790.  
Three males.

## 87. PAMPHILA MÆSOIDES.

*P. maesoides*, Butler, Trans. Linn. Soc. Lond., ser. 2, Zoology, vol. i, p. 554.  
Many specimens.

## 88. PAMPHILA GOLA.

*P. gola*, Moore, Proc. Zool. Soc. Lond. 1877, p. 594, pl. lviii, fig. 9, ♂.  
Numerous specimens (*A. de R.* and *Moti Ram*).

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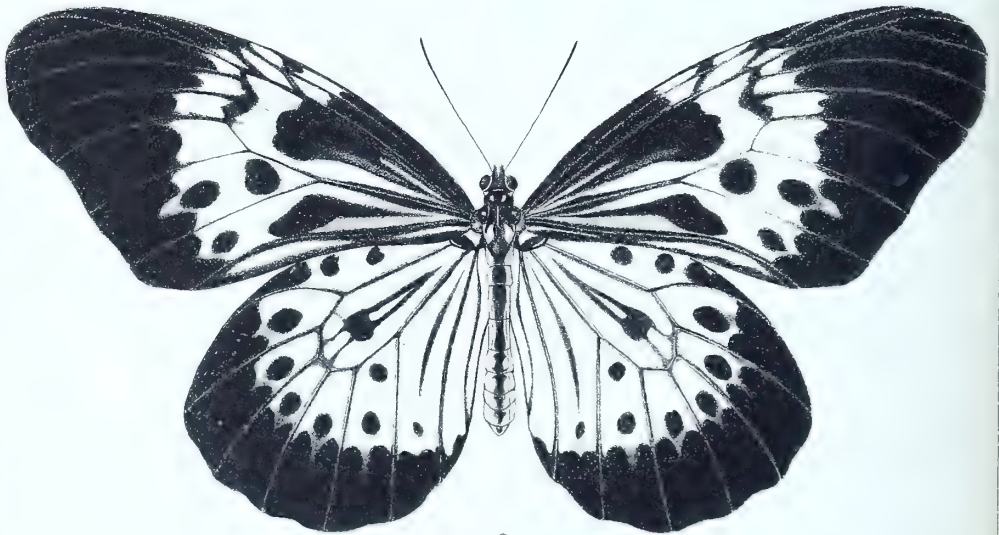
During the preparation of the foregoing list, we received from Bassein, on the mainland, two females of a species of *Hestia* of the same type as *H. cadelli*, in which the modifications of form and markings begun in *H. agamarschana* and continued in *H. cadelli* are carried to an extreme. These insects were obtained by Mr. Algernon Haden, who has generously presented one of them to the Museum, and after whom we have, consequently, all the more pleasure in naming the species

## HESTIA HADENI, n. sp., Pl. XIII, Fig. 2, ♀.

♀. Closely allied to *H. cadelli*. Wings above pure fleckless white marked and veined with black of a fuscous tint; with the marginal, submarginal, and all but the two posterior (which are subcoalescent with the marginal band) of the discal series of spots in the anterior wings, but with the marginal and submarginal series only in the posterior wings, com-



1



2

Fig 1 HESTIA CADFLII, ♂  
Fig 2 HESTIA HADENI, ♀

pletely run together so that only the inner portions of the outlines of the innermost series of the coalesced spots are in either case still discernible, and so as to form a very broad outer border of black to each of the wings.

Anterior wings broader and shorter, being less than twice as long as broad, the extreme length of the cell bearing the same relation to the submedian vein and to the less deeply emarginate outer margin; with the spot at the base of the second cell smaller and free of the veins, as also is the discoidal cellular spot at its posterior extremity; the curved club-shaped mark in the 3rd inner marginal cell much as in *H. agamarschana*, but not connected by a black streak with the subcoalescent marginal spot beyond it; the outer black border with a clouded white spot in the second cell more or less distinctly separating the second discal black spot off from the band; and the black second inner marginal, or sutural, cell longitudinally streaked with clouded white.

Posterior wings broader, with their undulated outer margin still more broadly rounded; the spot in the discoidal cell smaller and the spots around it also rather smaller and free of the black outer border though exhibiting a tendency to coalesce with it in front of the second median veinlet.

Wings below of a less pure white than above, marked and veined with fuscous.

Thorax more conspicuously marked with greyish-white than in *H. cadelli*, in which these marks are almost effaced, but this character, as also the difference in the proportions, and the less obvious emargination of the outer margin, of the wings, may be sexual.

Length of anterior wing 2.54; extreme length of its discoidal cell 1.35; expanse 5.18 inches.

HAB. Bassein, Burmah. Two specimens agreeing in every respect with one another.

#### EXPLANATION OF PLATE XIII.

Fig. 1. *Hestia cadelli*, W.-M. & de N., ♂.

Fig. 2. *Hestia hadeni*, W.-M. & de N., ♀.

